

**POST-DETECTION, FIBER OPTIC DISPERSION COMPENSATION  
USING ADJUSTABLE INFINITE IMPULSE RESPONSE FILTER  
EMPLOYING TRAINED OR DECISION-DIRECTED ADAPTATION**

**ABSTRACT**

An adaptive infinite impulse response (IIR) filter compensates for dispersive distortion in a fiber optic channel. The weighting coefficients of the IIR filter are updated in accordance with an error signal obtained by differentially combining the output of the IIR filter with downstream decision values or with an undistorted training signal. Undistorted training signals may be derived from training patterns (e.g., preamble) expressly transmitted for the purpose by the upstream transmitter, or from non-training, but known or predictable patterns transmitted by the upstream transmitter.